CLAIMS

1. Method of fastening a guard rail (60) to a concrete slab (100) by means of a self-expanding and self-undercutting bolt (1, 1′, 1″) comprising a dowel (10) having expanding lugs (17) and an expansion core (20, 23), the method comprising a phase consisting in drilling a hole (103′, 103″) in the slab, a phase consisting in driving the bolt in to a desired depth (E1 + E2) independent of the depth of the hole, a dynamic tightening phase (h) resulting in the formation of the undercut and a static tightening phase of the guard rail.

2. Method according to claim 1, in which the dynamic tightening is carried out by relative screwing of the dowel (10) and the expansion core (20) to a given depth (h).

3. Method according to claim 2, in which the dowel (10) is screwed on to the expansion core (20) until the fracture of incipient fracture means (15).

4. Self-expanding and self-undercutting guard rail bolt (1) for carrying out the method of claim 1, comprising a dowel (10) and a counter-dowel (20) screwed together by means of their screwing ends (12, 22), the dowel (10) comprising at its fastening end (11) a guard rail fastening head (13) designed (14) to be driven in rotation and rigidly connected at its screwing end (12) by means of incipient fracture means (15) to a ring (16) provided with expansion lugs (17), the counter-dowel (20) comprising at its other expansion end (21) an expansion cone (23) and anti-rotation means (24), the expansion lugs (17) comprising means (170) for forming an undercut.

5. Tool (2) for fastening a guard rail bolt (1), comprising means (32, 50, 39, 35) for driving it in rotation and complementary means (31, 34) for controlling the driving depth of the bolt (1).

6. Tool according to claim 5, provided with a spindle (39) fixed in rotation with a cylindrical drive sleeve (35) designed to drive the bolt (1) in rotation.

7. Tool according to claim 6, in which the sleeve (35) is guided in translation by a stop guide (31) and is returned by the action of a spring (38) to a pin (14) for driving the bolt (1) in rotation.

8. Tool according to claim 7, in which the length (e2) of the sleeve (35) is equal to the length (b) of the spindle (39) increased by the length t of the pin (14), but reduced by the minimum length (l) of the spring (38).

9. Tool according to one of claims 7 and 8, in which the length (e1) of the lower end (34) of the stop guide (31) is a function of the thickness (E2) of the fastening nut.